CLAIMS

1. A wireless communication apparatus comprising:

monitoring means for monitoring for each unit frame a situation of transmission queuing cell in each of uplink storing means and downlink storing means for each of a plurality of communication users; and

allocating means for allocating a unit sub-slot to each transmission queuing cell for each unit frame based on an entire situation of the storing means.

2. The wireless communication apparatus according to claim 1, wherein the allocating means allocates unit sub-slots of which the number is in a range that the unit frame is capable of storing, according to a constant regulation.

3. The wireless communication apparatus according to claim 2, wherein the constant regulation includes a regulation such that the unit sub-slot is fairly allocated to each transmission queuing cell stored in each storing means and the transmission queuing cell allocated the unit sub-slot is deleted from the storing means.

4. The wireless communication apparatus according to claim 3, wherein the constant regulation includes a regulation such that a first circulation is repeated such that at an allocation occasion for each of the uplink storing means and the downlink storing means for each communication user, the unit sub-slot is allocated to

a transmission queuing cell with a longest transmission queuing time stored in each storing means.

5. The wireless communication apparatus according to claim 4, wherein the constant regulation includes a regulation such that the unit sub-slot is preferentially allocated to a particular transmission queuing cell stored in each storing means.

6. The wireless communication apparatus according to claim 5, wherein the constant regulation includes a regulation that provides between each first circulation a second circulation such that at an allocation occasion for each of the uplink storing means and the downlink storing means of each communication user, the unit sub-slot is allocated only to the particular transmission queuing cell that has the longest transmission queuing time stored in each storing means.

7. The wireless communication apparatus according to claim 6, further comprising:

arranging means for dividing all unit sub-slots allocated to transmission queuing cells for uplink and downlink respectively into an uplink sub-slot group and a downlink sub-slot group, gathering unit sub-slots allocated to each communication user at each of the uplink sub-slot group and the downlink sub-slot group into a channel, and arranging the channel on each of an uplink user channel and a downlink user channel in the unit frame.

8. The wireless communication apparatus according to claim 7, wherein the allocating means comprises comparing means for performing a comparison between the total number of stored particular transmission queuing cells and a threshold for each storing means, and performs an allocation corresponding to a result of the comparison.

9. The wireless communication apparatus according to claim 7, wherein the allocating means comprises comparing means for performing a comparison between a transmission queuing time of a stored particular transmission queuing cell and a threshold for each storing means, and performs an allocation corresponding to a result of the comparison.

10. The wireless communication apparatus according to claim 8, wherein the comparing means performs the comparison only to storing means for storing a particular transmission queuing cell.

11. The wireless communication apparatus according to claim 9, wherein the comparing means performs the comparison only to storing means for storing a particular transmission queuing cell.

12. The wireless communication apparatus according to claim 10, wherein the comparing means sets the threshold corresponding to a quality requirement of the particular transmission queuing cell.

13. The wireless communication apparatus according to

claim 11, wherein the comparing means sets the threshold corresponding to a quality requirement of the particular transmission queuing cell.

14. The wireless communication apparatus according to claim 1, wherein the frame is divided into a terminal transmission queuing situation reporting signal part and a user information part, and a dedicated control channel is allocated to a transmission queuing situation reporting signal of each wireless terminal.

15. The wireless communication apparatus according to claim 14, wherein a second control channel is provided besides the dedicated control channel, and both control channels are used corresponding to a delay characteristic requirement of each wireless terminal.

16. A base station provided with a wireless communication apparatus, said wireless communication apparatus comprising:

monitoring means for monitoring for each unit frame a situation of transmission queuing cell in each of uplink storing means and downlink storing means for each of a plurality of communication users; and

allocating means for allocating a unit sub-slot to each transmission queuing cell for each unit frame based on an entire situation of the storing means.

17. A communication terminal apparatus performing wireless communications with a base station apparatus provided with a wireless communication apparatus, said

wireless communication apparatus comprising:

monitoring means for monitoring for each unit frame a situation of transmission queuing cell in each of uplink storing means and downlink storing means for each of a plurality of communication users; and

allocating means for allocating a unit sub-slot to each transmission queuing cell for each unit frame based on an entire situation of the storing means.

18. The communication terminal apparatus according to claim 17, wherein the communication terminal apparatus reports a situation of transmission queuing cell to the base station.

19. A wireless communication method, comprising:

monitoring for each unit frame a situation of transmission queuing cell in each of uplink storing means and downlink storing means for each of a plurality of communication users reported from respective one of the plurality of communication users; and

allocating a unit sub-slot to each transmission queuing cell for each unit frame based on an entire situation of the storing means.

20. The wireless communication method according to claim 19, further comprising:

performing a comparison between the total number of stored particular transmission queuing cells and a threshold for each storing means; and

performing an allocation corresponding to a result

of the comparison.

21. The wireless communication apparatus according to claim 19, further comprising:

performing a comparison between a transmission queuing time of a stored particular transmission queuing cell and a threshold for each storing means; and

performing an allocation corresponding to a result of the comparison.

22. The wireless communication method according to claim 20, further comprising:

dividing all unit sub-slots allocated to transmission queuing cells for uplink and downlink respectively into an uplink sub-slot group and a downlink sub-slot group;

gathering unit sub-slots allocated to each communication user at each of the uplink sub-slot group and the downlink sub-slot group to construct a channel;

arranging the channel on each of an uplink user channel and a downlink user channel in the unit frame; and

notifying said each communication user of a result of arrangement.

23. The wireless communication method according to claim 21, further comprising:

dividing all unit sub-slots allocated to transmission queuing cells for uplink and downlink respectively into an uplink sub-slot group and a downlink

sub-slot group;

gathering unit sub-slots allocated to each communication user at each of the uplink sub-slot group and the downlink sub-slot group to construct a channel;

arranging the channel on each of an uplink user channel and a downlink user channel in the unit frame; and

notifying said each communication user of a result of arrangement.